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IN THE UNITED STATES DISTRICT COURT

FOR THE DISTRICT OF ALASKA

In re Crash of Aircraft N93PC)	No. 3:15-cv-0112-HRH
)	[Consolidated with
on July 7, 2013, at Soldotna, Alaska)	No. 3:15-cv-0113-HRH and
_____)	No. 3:15-cv-0115-HRH]

ORDER

Honeywell's Motion for Summary Judgment re Liability

Honeywell International Inc. moves for summary judgment on liability.¹ This motion is opposed.² Oral argument was requested and has been heard.

Facts

On July 7, 2013, a deHavilland DHC-3 Otter airplane operated by Rediske Air, Inc. and piloted by Walter Rediske crashed shortly after takeoff from the Soldotna Airport. Rediske and all of the passengers on board were killed in the crash. Plaintiffs, which are the estates of the passengers and Rediske, assert wrongful death, negligence, strict product liability, and breach of warranty claims against Honeywell.

¹Docket No. 234.

²Docket Nos. 274 and 275.

A Honeywell TPE331 turbine engine had been installed in the accident aircraft. “The TPE331 engine is a lightweight fixed-shaft engine designed to provide primary power for fixed wing aircraft. . . .”³ “The two stages of compressors and three stages of turbines are mounted on a common shaft and make up the power section of the engine.”⁴ “The torsion shaft, which is positioned concentrically inside the main shaft, extends through the length of the main shaft. The torsion shaft is driven by a spline at the end of the main shaft, and it drives the matched bearing and shaft set (high speed pinion) through a spline coupling at the front of the torsion shaft.”⁵ “The torsion shaft is designed to twist slightly with the application of power.”⁶ “The engine torque sensor gear assembly measures the engine output torque created by the angular displacement between the engine main shaft and the torsion shaft, which occurs when the engine is driving the propellor.”⁷ “The torsion shaft has two bushings that sit in ‘lands’ on the shaft . . . to keep the torsion shaft circumferentially within the main shaft.”⁸ It is undisputed that post-accident, the torsion shaft was found fractured.

³Studtmann Expert Report at 3, Exhibit A, Honeywell International Inc.’s Motion for Summary Judgment, Docket No. 234.

⁴Id.

⁵Id. at 4.

⁶Id.

⁷Id.

⁸Honeywell’s Memorandum in Support of its Motion for Summary Judgment at 4, Docket No. 235.

The torsion shaft was manufactured in 1998.⁹ As part of the manufacturing process, a technician is required “to straighten the shaft per sketch.”¹⁰ “Along the length of the shaft, the maximum allowable runout limits vary from .002 to .004, based on location.”¹¹ The torsion shaft was found to be in conformance with the specifications.¹²

The torsion shaft was installed in an airplane (not the accident airplane) on September 14, 1998.¹³ The engine was later removed from this aircraft on September 25, 2001.¹⁴ The pre-removal inspection sheet did not reveal any unusual or abnormal conditions in the engine.¹⁵ The engine was then installed in a different airplane on March 7, 2003.¹⁶ The engine was subsequently removed from that aircraft and overhauled by Executive Aircraft

⁹Studtmann Expert Report at 19, Exhibit A, Honeywell International Inc.’s Motion for Summary Judgment, Docket No. 234.

¹⁰Id.

¹¹Id. at 19-20.

¹²Id. at 20 and Appendix A thereto.

¹³Studtmann Expert Report at 21, Exhibit A, Honeywell International Inc.’s Motion for Summary Judgment, Docket No. 234.

¹⁴Id.

¹⁵Appendix C, Studtmann Expert Report, Exhibit A, Honeywell International Inc.’s Motion for Summary Judgment, Docket No. 234.

¹⁶Studtmann Expert Report at 21, Exhibit A, Honeywell International Inc.’s Motion for Summary Judgment, Docket No. 234.

Maintenance.¹⁷ During the overhaul, the torsion shaft was inspected and the runout measured, and it was found to be in compliance with the Honeywell Inspection / Repair Manual.¹⁸

On July 7, 2010, the engine was installed in the accident aircraft by Recon Air Corporation. “According to the logbooks and other records, the torsion shaft . . . had accumulated approximately 540.6 hours since installation in 1998.”¹⁹

Arthur Lee Coffman, one of plaintiffs’ experts, opined that “the subject engine failed in flight due to the failure of the torsion shaft. . . .”²⁰ Mark Hood, plaintiffs’ metallurgical expert, opined that “[t]he torsion shaft in the subject Honeywell TPE 331-10R engine failed in shear overload” and that “[t]he post-accident condition of the torsion shaft bushing contact areas inside the main shaft installed in the Honeywell TPE 331-10R engine is also consistent with in-flight shear failure of the torsion shaft.”²¹ And, Colin Sommer, another of plaintiffs’ experts, opined that “[t]he torsion shaft in the subject Honeywell International, Inc. TPE331-

¹⁷Id.

¹⁸Id.

¹⁹Id.

²⁰Expert Report of Arthur Lee Coffman at 2, Exhibit D, Honeywell International Inc.’s Motion for Summary Judgment, Docket No. 234.

²¹Hood’s Materials Engineering Investigation Report at 7, Exhibit F, Honeywell International Inc.’s Motion for Summary Judgment, Docket No. 234.

10R-511C failed in-flight, shortly after departure from the Soldotna Airport in Soldotna, AK.”²²

Honeywell now moves for summary judgment on plaintiffs’ theory of liability, which, according to Honeywell, is that the torsion shaft failed in flight, “which then caused the [accident] airplane to become uncontrollable and crash.”²³

Discussion

Summary judgment is appropriate when there are no genuine issues of material fact and the moving party is entitled to judgment as a matter of law. Fed. R. Civ. P. 56(a). The initial burden is on the moving party to show that there is an absence of genuine issues of material fact. Celotex Corp. v. Catrett, 477 U.S. 317, 325 (1986). If the moving party meets its initial burden, then the nonmoving party must set forth specific facts showing that there is a genuine issue for trial. Anderson v. Liberty Lobby, Inc., 477 U.S. 242, 247-48 (1986). In deciding a motion for summary judgment, the court views the evidence of the nonmovant in the light most favorable to that party, and all justifiable inferences are also to be drawn in its favor. Id. at 255. “[T]he court’s ultimate inquiry is to determine whether the ‘specific facts’ set forth by the nonmoving party, coupled with undisputed background or contextual facts, are such that a rational or reasonable jury might return a verdict in its favor based on

²²Sommer’s Report of Findings at 21, Exhibit J, Honeywell International Inc.’s Motion for Summary Judgment, Docket No. 234.

²³Honeywell’s Memorandum in Support of its Motion for Summary Judgment at 2, Docket No. 235.

that evidence.” Arandell Corp. v. Centerpoint Energy Services, Inc., 900 F.3d 623, 628–29 (9th Cir. 2018) (quoting T.W. Elec. Service, Inc. v. Pacific Elec. Contractors Ass’n, 809 F.2d 626, 631 (9th Cir. 1987)).

First, Honeywell argues that plaintiffs have no admissible evidentiary support for their theory of liability. Plaintiffs have disclosed four experts who have offered opinions about the torsion shaft, Coffman, Hood, Sommer, and John Cochran. Honeywell suggests that it filed motions to exclude the testimony of all of these experts. But Honeywell only filed a motion to exclude testimony from Coffman and Sommer.²⁴ And while the court excluded some of Sommer’s opinions as they related to the torsion shaft, it did not exclude all of his opinions and it did not exclude Coffman’s opinions.²⁵ Thus, to the extent that Honeywell is arguing that it is entitled to summary judgment as to liability because all of plaintiffs’ expert testimony has been excluded, that argument fails.

Honeywell next argues that it is entitled to summary judgment on liability because plaintiffs have no evidence that the torsion shaft had either a design defect or manufacturing defect. This argument is made in the context of plaintiffs’ strict product liability claims. “A

²⁴Texas Turbine and Recon Air moved to exclude some of Cochran’s testimony and opinions but those motions were denied. Order re Motions in Limine to Exclude Testimony of John Cochran at 18, Docket No. 365. In its motion to exclude the testimony of Sommer and Coffman, Honeywell indicated that it intended to “more directly” challenge Hood’s testimony at a later date. Honeywell’s Memorandum in Support of its Motion to Exclude the Testimony of Colin Sommer and Arthur Lee Coffman at 18 n.4, Docket No. 233. No such challenge has yet been brought by Honeywell.

²⁵Order re Honeywell’s Motion to Exclude the Testimony of Colin Sommer and Arthur Lee Coffman at 22, Docket No. 363.

product may be defective because of a manufacturing defect, a defective design, or a failure to contain adequate warnings.”²⁶ Shanks v. Upjohn Co., 835 P.2d 1189, 1194 (Alaska 1992). Under Alaska law, to prevail on a products liability claim, a plaintiff must prove that 1) the product was defective, 2) the product was defective when it left the possession of the defendant, and 3) a defect in the product was a legal cause of the plaintiff’s injuries.²⁷

As to any alleged design defect, Honeywell contends that none of plaintiffs’ experts have identified any issues with respect to the design of the torsion shaft. In other words, Honeywell argues that plaintiffs cannot prove the first element of a design defect claim.

Plaintiffs, however, argue that in a design defect case, “the factfinder can find a product defective . . . if the plaintiff demonstrates that the product failed to perform as safely as an ordinary consumer would expect when used in an intended or reasonably foreseeable manner. . . .” General Motors Corp. v. Farnsworth, 965 P.2d 1209, 1220 (Alaska 1998) (citation omitted). This is known as the “consumer expectation test,” id., and under this test, “the emphasis is on the failure of safe performance, rather than on the specific reasons for the failure.” Patricia R. v. Sullivan, 631 P.2d 91, 103 (Alaska 1981). Plaintiffs argue that a consumer expects an aircraft engine to provide power to the propeller but in the accident aircraft, the torsion shaft failed shortly “after takeoff which caused a complete disconnect of the engine’s power section to the propeller and resulted in a complete loss of propeller

²⁶Although plaintiffs’ complaints contain some conclusory allegations about a failure to warn, this does not seem to be the basis for plaintiffs’ claims against Honeywell.

²⁷Alaska Civil Pattern Jury Instruction 7.02.

thrust.”²⁸ Plaintiffs argue that there are material questions of fact as to whether the engine failed in flight and thus the instant motion for summary judgment must be denied.

Plaintiffs contend that the opinions of their expert Sommer are sufficient to create issues of material fact as to whether the engine failed in flight. Plaintiffs cite to Sommer’s averments in his August 6 affidavit, but that affidavit has been stricken from the record.²⁹ However, in his expert report, Sommer opined that “[t]he condition of the compressor impellers and turbine wheel assemblies is consistent with an engine that was not producing power at impact” and that “[t]he post-crash condition of impeller blade leading edges and lack of foreign object damage to the impeller is further evidence that the engine was not producing power when it impacted the ground.”³⁰ And, Sommer explained in his report that it was the failure of the torsion shaft that resulted in the loss of engine power.³¹

Plaintiffs also point to Hood’s testimony. In his expert report, Hood opined that “[t]he subject Honeywell TPE 331-10R engine’s compressor and turbine section components did not exhibit damage consist[ent] with an engine operating under takeoff power conditions at

²⁸Plaintiffs’ Opposition to Honeywell’s Motion for Summary Judgment at 7, Docket No. 274.

²⁹Order re Motion to Strike August 6, 2019 Sommer Affidavit at 11, Docket No. 364.

³⁰Sommer’s Report of Findings at 21, Exhibit J, Honeywell International Inc.’s Motion for Summary Judgment, Docket No. 234.

³¹Id. at 19

the time of impact.”³² At his deposition, Hood explained that “there was still debris in the intake area that had not been pulled into the engine” and that in his opinion, “on an operating engine,” that “should have been pulled into the engine.”³³

Plaintiffs also cite to the testimony of Coffman. In particular, they point to his opinion that “the subject engine failed in-flight due to the failure of the torsion shaft and the engine not producing power at the time of impact.”³⁴ This opinion was based on physical evidence, such as light rubbing within the engine and very light blade splatter.³⁵

Plaintiffs also contend that Honeywell’s expert, David Studtmann,³⁶ has admitted that much of the evidence one would normally see in a powered engine at impact is missing from this case. Studtmann testified at his deposition that the compressor section blades were not torn, they were not broken off, and they were not bending in the opposite direction.³⁷

³²Hood’s Materials Engineering Investigation Report at 7, Exhibit F, Honeywell International Inc.’s Motion for Summary Judgment, Docket No. 234.

³³Deposition of Mark B. Hood, P.E. at 11:24-12:4, Exhibit D, Plaintiffs’ Opposition to Honeywell’s Motion for Summary Judgment, Docket No. 274.

³⁴Coffman Expert Report at 2, Exhibit E, Plaintiffs’ Opposition to Honeywell’s Motion for Summary Judgment, Docket No. 274.

³⁵Id. at 2-4.

³⁶Studtmann is “responsible for providing aircraft accident investigation support of Honeywell Aerospace” and has “participated in about 200 investigations in support of Honeywell’s product portfolio.” Studtmann Expert Report at 1, Exhibit A, Honeywell International Inc.’s Motion for Summary Judgment, Docket No. 234.

³⁷Video Deposition of David Studtmann at 48:13-51:16, Exhibit G, Plaintiffs’
(continued...)

Plaintiffs argue that this is significant because these are “all telltale signs of an engine that is running at impact.”³⁸

In reply, Honeywell contends that plaintiffs are arguing that the consumer expectation test is a cause of action, which it is not. Rather, Honeywell argues that “it is a means by which a plaintiff can demonstrate a defect in a strict liability claim based on a design defect.”³⁹ Honeywell argues that the problem with plaintiffs’ design defect claim is that none of plaintiffs’ experts have offered any opinions that were critical of the design of the Honeywell engine or the torsion shaft. Honeywell argues that plaintiffs’ experts have all concentrated on whether there was a manufacturing defect in the torsion shaft. And “[t]he Alaska Supreme Court has not expressly held that the consumer expectation test is appropriate where only manufacturing defects are at issue.”⁴⁰ Honeywell also argues that plaintiffs cannot fabricate a design defect to create a question of fact. Honeywell contends that in their opposition to the instant motion, plaintiffs are focusing on whether the engine was producing power at impact, rather than on the torsion shaft issue, which was the basis for Honeywell’s motion for summary judgment on liability. Honeywell argues that if all

³⁷(...continued)

Opposition to Honeywell’s Motion for Summary Judgment, Docket No. 274.

³⁸Plaintiffs’ Opposition to Honeywell’s Motion for Summary Judgment at 14, Docket No. 274.

³⁹Honeywell’s Reply in Support of its Motion for Summary Judgment at 3, Docket No. 302.

⁴⁰Alaska Civil Pattern Jury Instructions 7.03, Use Note.

plaintiffs had to do to survive its motion for summary judgment is show that there is conflicting evidence as to whether the engine was running at the time of impact, Honeywell would impermissibly be made an insurer of its product. Honeywell contends that there are a number of reasons an engine might not be producing rated power at impact that are consistent with the reasonable expectations of a consumer for engine performance. But to the extent that plaintiffs are contending that the engine was not producing power at impact because the torsion shaft failed in flight, then Honeywell argues that is a manufacturing defect theory of liability.

It is the court's perception that plaintiffs' strict product liability claims against Honeywell are based on the contention that the engine was not producing power at impact because the torsion shaft failed in flight. It is somewhat unclear why, in their opposition to the instant motion, plaintiffs focused on the question of whether the engine was producing power at impact, rather than on whether the torsion shaft failed during flight because of a defect. It is the latter question that is the focus of the instant motion for summary judgment.

In terms of establishing whether the torsion shaft was defective, regardless of whether it was due to a design defect or a manufacturing defect, plaintiffs can rely on the consumer expectation test. As the Alaska Supreme Court has observed, "[t]he delineation between design and manufacturing defects is undoubtedly blurry. However, we have long recognized that overlap between the two categories is unavoidable. We have clearly stated that rigid delineation of the two categories is neither necessary nor desirable." Colt Industries

Operating Corp. v. Frank W. Murphy Manufacturer, Inc., 822 P.2d 925, 930 (Alaska 1991), superseded by statute on other grounds, Tort Reform Act of 1986, Ch. 139, § 1, SLA 1986, as recognized by Alaska Gen. Alarm, Inc. v. Grinnell, 1 P.3d 98, 105 (Alaska 2000)). Thus, as to the first element of their strict product liability claims, plaintiffs can survive Honeywell’s motion for summary judgment if they have some evidence that the torsion shaft did not perform as an ordinary consumer would expect.

Plaintiffs have such evidence. As set out above in the facts section, Coffman, Sommer, and Hood have all opined that the torsion shaft broke in flight, which caused the engine to stop producing power. This is not how an ordinary consumer would expect the torsion shaft in a single-engine aircraft to perform. Because there are questions of fact as to whether the torsion shaft broke in flight,⁴¹ there are questions of fact as to whether the torsion shaft was defective.

The second element of a strict product liability claim requires the plaintiff to “establish . . . that the product was defective at the time it left the possession of the manufacturer.” Hiller v. Kawasaki Motors Corp., U.S.A., 671 P.2d 369, 372 (Alaska 1983). “[A] substantial change in the product after it leaves the manufacturer’s hands will ordinarily defeat a claim based on strict tort liability.” Id. (citation omitted).

⁴¹Honeywell disputes that the torsion shaft failed in flight. For example, Studtmann opines that “[t]he torsional overload separation of the torsion shaft was the result of the propeller strike at impact.” Studtmann Expert Report at 59, Exhibit A, Honeywell International Inc.s’ Motion for Summary Judgment, Docket No. 234.

Honeywell argues that in order for plaintiffs to show that the torsion shaft was defective when it left Honeywell's possession or control, they must have some direct evidence that the torsion shaft as manufactured varied from the design specification. But, Honeywell argues that plaintiffs have no such evidence. Honeywell emphasizes that Hood testified that he did not find any evidence of material defects⁴² and that the evidence shows that the torsion shaft passed all required inspections at the time of manufacture and during subsequent inspections.⁴³ Honeywell also notes that it did testing that "confirmed that it is not feasible to install" a torsion shaft with the same bend as the post-accident torsion shaft had.⁴⁴

Honeywell also argues that any contention that the torsion shaft was defective when it left its control is dispelled by the fact that the engine operated for 15 years and 540 hours without reports of any problems that would indicate a bent torsion shaft. Honeywell emphasizes that plaintiffs' experts have offered no explanation as to why, if the torsion shaft was bent during manufacturing, the accident aircraft operated safely for years. Honeywell also contends that plaintiffs' experts testified that they did not even know exactly why the torsion shaft failed. Coffman testified that he had "no way to prove this or anything. I think

⁴²Hood Deposition at 35:23-36:1, Exhibit G, Honeywell International Inc.'s Motion for Summary Judgment, Docket No. 234.

⁴³Studtmann Expert Report, Exhibit A at 19-21, Honeywell International Inc.'s Motion for Summary Judgment, Docket No. 234.

⁴⁴Id. at 22-27.

it's possible since the bushing caused more damage than I've ever seen before, did it freeze up prior to spinning? . . . I have no way of proving that except it is a possibility."⁴⁵ Sommer testified that it was possible that the torsion shaft broke because the pilot overtorqued the engine but that he did not think "anyone's ever tested that, but it is possible."⁴⁶

Plaintiffs have some evidence, albeit weak, that the defect in the torsion shaft was there when the product left Honeywell's possession and control. For example, Sommer testified that

it is obvious that there was significant binding between the rear bushing and the main shaft. . . . But the binding of that bushing is so significant because of the heavy scoring and damage to the rear land of the torsion shaft that it is indicative of both relative rotation of the torsion shaft to the main shaft and some sort of a defect in the bushing or the land of the torsion shaft prior to installation.^[47]

In addition, Hood testified that he did not "see anything that indicated that there was post-accident damage that would be responsible for the" bend in the torsion shaft,⁴⁸ which could lead to an inference that the torsion shaft was defective from the time it left Honeywell's

⁴⁵Video Deposition of Arthur Lee Coffman at 22:1-7, Exhibit E, Honeywell International Inc.'s Motion for Summary Judgment, Docket No. 234.

⁴⁶Video Deposition of Colin Sommer at 109:9-23, Exhibit B, Honeywell International Inc.'s Motion for Summary Judgment, Docket No. 234.

⁴⁷Sommer Deposition at 41:20-42:12, Exhibit G, Plaintiffs' Opposition to Honeywell's Motion for Summary Judgment, Docket No. 274.

⁴⁸Hood Deposition at 51:9-12, Exhibit D, Plaintiffs' Opposition to Honeywell's Motion for Summary Judgment, Docket No. 274.

possession and control. Viewing this evidence in the light most favorable to plaintiffs, a reasonable jury could conclude that the torsion shaft was defective at the time it left Honeywell's possession and control.

Finally, Honeywell argues that plaintiffs cannot prove causation, the third element of a strict product liability claim. "A defendant's design [or manufacturing] defect will be the legal or proximate cause of the plaintiff's injury if the defective product was more likely than not a substantial factor in bringing about the plaintiff's injury." Dura Corp. v. Harned, 703 P.2d 396, 406 (Alaska 1985), superseded on other grounds by statute, Tort Reform Act, ch. 139, § 1, SLA 1986. Such determinations "usually involve questions of fact within the province of the jury; proximate [or legal] cause becomes a matter of law only where reasonable minds cannot differ." Winschel v. Brown, 171 P.3d 142, 148 (Alaska 2007). "A mere possibility of causation is not enough." Hinman v. Sobocienski, 808 P.2d 820, 823 (Alaska 1991) (citation omitted). "If a plaintiff's explanation from the evidence as to how her injuries were caused is not more probable than any other explanation, she has not borne her burden of proof." Id.

Honeywell argues that the testimony of plaintiffs' experts is not sufficient to create an issue of material fact as to causation. Honeywell argues that plaintiffs' experts' explanations of how the torsion shaft failed are nothing more than speculation. Honeywell argues that plaintiffs' experts have not explained how or why the torsion shaft became bent but rather have speculated about possible causes. And if plaintiffs have no evidence as to

why the torsion shaft failed, Honeywell argues that they cannot show that this defect was a substantial factor in causing the accident.

Plaintiffs contend that “[t]he bent shaft was responsible for the aft bushing to bind the torsion shaft and the main shaft, which caused the torsion shaft to shear resulting in the loss of power.”⁴⁹ Coffman testified that the binding at the aft bushing may have caused the pilot “to apply an overtorque load to the shaft” which would cause the torsion shaft to fail.⁵⁰ And Coffman opined that the failed torsion shaft caused the engine to fail, thereby causing the accident aircraft to crash.⁵¹ This testimony, again albeit weak, is sufficient to create an issue of fact as to how the torsion shaft failed in flight and if it did, whether this failure caused the engine to fail, resulting in the accident aircraft crashing.

Conclusion

Honeywell’s motion for summary judgment as to liability⁵² is denied.

DATED at Anchorage, Alaska, this 26th day of May 2020.

/s/ H. Russel Holland
United States District Judge

⁴⁹Plaintiffs’ Opposition to Honeywell’s Motion for Summary Judgment at 20, Docket No. 274.

⁵⁰Coffman Deposition at 25:1-26:10, Exhibit F, Plaintiffs’ Opposition to Honeywell’s Motion for Summary Judgment, Docket No. 274.

⁵¹Coffman Expert Report at 5, Exhibit D, Honeywell International Inc.’s Motion for Summary Judgment, Docket No. 234.

⁵²Docket No. 234.